



<http://www.coopext.colostate.edu/boulder/AG/smallacreage.shtml>

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## **From the Extension Agent**

### **Fall Pasture Management Considerations**

Many small acreage pastures have been hit hard by drought conditions this season. Limited irrigation and dryland pastures show marked declines in grass vigor and health. If grazing and livestock access to these has not been eliminated this year, many of these will likely emerge from winter dormancy with considerable grass mortality and ensuing weed pressures.

If you know that your pasture is in bad shape, get more information on management and make plans now to implement measures to mitigate weeds and vegetate denuded areas.

Winter grazing is OK in a healthy pastures after grasses have browned-out, but in a stressed pasture this can simply exacerbate the current level of damage. Planning to keep animals in drylot areas and purchasing feed is your best choice to move toward rebuilding pasture health. Meg Sitarik, SAM volunteer, has written a very informative article in this Fall 2006 newsletter intended to help horse owners get the most out of feeding hay and grains during high hay prices.

Fall dormant seeding (November) may be a good option for you, depending on the severity of weed pressures in your pasture.

Our SAM volunteers have been trained to help you think through the best management practices for your pasture. Call 303-678-6238 to get in touch with a SAM volunteer. Also, review the management resources on this page:

<http://www.coopext.colostate.edu/boulder/AG/smallacreagepasture.shtml>

### **Enjoy the harvest season at Farmers' Markets**

October marks the peak of the harvest season for local produce. One way to support agriculture in Boulder County is to buy from those farmers growing produce here. [www.boulderfarmers.org/](http://www.boulderfarmers.org/) These growers work hard to provide seasonal produce for you and your family.

Now is the time to stock up on roasted peppers, winter squash, potatoes, onions, tomatoes, carrots, kale, lettuce and more. Many are great candidates for long-term storage in root cellar type conditions or frozen, canned, or dried. Colorado State University Cooperative Extension's Food Preservation Factsheets can be found on this page: [www.ext.colostate.edu/pubs/foodnut/pubfood.html#pres](http://www.ext.colostate.edu/pubs/foodnut/pubfood.html#pres)

## **SAM Email Listserv**

If you are receiving this newsletter for the first time and are not subscribed to the [boco\\_small\\_acreage@colostate.edu](mailto:boco_small_acreage@colostate.edu) listserv, you may request subscription on the SAM website (linked in header above). This quarterly e-newsletter and other timely info will be distributed via this email listserv.

Subscribers may use the listserv also as a SAM info gathering mechanism. For example, you may inquire about who is available in the area supply hay, to perform swathing/baling, etc.

The listserv is not a marketplace, however. Because it is hosted on the CSU server, **NO COMMERCIAL EMAILS ARE ALLOWED. DO NOT ATTEMPT TO SELL ANYTHING VIA THE LISTSERV – THANKS.** Use the newsletter ad section for these purposes.

Currently, there are 106 subscribers to the listserv.

If you have not explored the SAM website, please take some time to check out the online resources available within that website.

### ***Adrian Card***

Adrian Card  
Agriculture/4-H Extension Agent  
SAM Program Coordinator  
CSU Cooperative Extension, Boulder County



## **Three to Six month weather outlook** **By Sharon Bokan, SAM Volunteer**

It is hard enough to predict Front Range weather for tomorrow much less for 3 to six months. This is exactly what the Climate Prediction Center of the National Weather Service attempts to do. They not only look at atmospheric conditions but also use oceanic information to make their predictions.

From the Climate Prediction Center of the National Weather Service (<http://www.cpc.ncep.noaa.gov/products/predictions/>), they are looking for warmer than normal conditions in most of the western U.S. (west of the Mississippi river) for the next 3-6 months. Nolan Doesken, climatologist, at Colorado State University agrees since we appear to be trending warmer. As far as precipitation, their predictions are an equal chance of above or below normal precipitation. Their prediction for southern New Mexico and western Texas are for above normal precipitation due to El Nino. Depending on how El Nino sets up and where it sets up may determine if the higher precipitation south of us will migrate north to also give us higher precipitation.

As the saying goes, if you don't like the weather in Colorado wait 15 minutes.

## **Getting the most out of your Hay** **By Meg Sitarik, SAM Volunteer**

The current drought conditions are having an effect on this years hay supply. The hay market is based on supply and demand, which means prices rise and fall accordingly. We are already seeing the price creep up in response to a poor 1<sup>st</sup> cutting. The lack of moisture last winter and the hot dry spring/summer took its toll on the number of bales produced in each field. I spoke with several area hay farmers and they all reported 1<sup>st</sup> cut produced 25% - 30% of normal.

Another factor to consider is the price of fuel this summer. With this knowledge horse owners need to be proactive. Being a horse owner I wanted to know if I could stretch my hay supply and how much work, if any, would this add to my feeding routine? Will this work for the average horse person?

After reading several articles and reviewing my notes from my Equine Nutrition classes at Colorado State University, I decided a user-friendly approach was needed. There are ways to balance each nutrient in the ration and almost every article tells the reader to use a forage probe to get 20 – 25 core samples of hay to send off for nutrient testing. I know this is the “right way” to figure a horses diet however, it seems overwhelming, time consuming and complicated. Most of us throw hay to our horses with little thought, if they look chubby we give them less; if they look thin we give them more. As long as we have good quality horse hay life is good. I’ve used this method for 20 years and have 4 very happy healthy horses.

Horses need 1.5% - 3.0% of their body weight per day in total feed with a minimum of 1% in roughage. Roughage is the most important part of a horses’ diet. Roughage supplies energy, protein, some vitamins and minerals but most important is fiber. Fiber is necessary for normal function of the horses’ digestive system.

I used a weight tape (available at CO Animal Health, Longmont) to get an estimate on each horses weight. A regular tape measure can be used. Measure the horse’s heart girth with the horse standing square with head up. Encircle the tape around the horse’s chest behind the front legs and pull snug. On the weight tape you will see a weight estimate. On the regular tape measure note the inches and use the chart to convert to weight estimate. Keep in mind these are estimates.

### Tape Measure Conversion

30” = 85#	44.5” = 300#	69” = 900#
32” = 100#	50.5” = 400#	72# = 1000#
34.5” = 125#	55.5 = 500#	74.25” = 1100#
37” = 150#	59.5” = 600#	77.5” = 1200#
39.5” = 200#	63” = 700#	80” = 1300#
42.5” = 250#	66.25” = 800#	

To figure the amount of feed I used the horse’s desirable weight. In order to decide the percent of body weight you also must consider the

**By adding 3.75 lbs of grain per day I am saving 5 lbs. of hay daily. I customized this to each horse and found that I could save 35lbs. of hay daily which is roughly a half bale. That is 3.5 bales weekly and 14 bales per month!**

horse’s level of activity and if they are pregnant, lactating, a weanling or yearling. My horses are categorized as “mature idle”. I chose 2.0 % for three horses and 3.0% for Grandpa because he is the one animal on my farm that can’t seem to gain weight.

I will use Wizbang as an example. His total feed per day will be 2.0% of his body weight. I want a minimum of 1% roughage. I decided 1.5% roughage and 0.5% grain. Which adds up to 2.0%

**Example: Wizbang weighs approximately 1110 lbs. Desirable weight is 1000 lbs.**

- 1) To find 2% of his body weight multiply 2% by 1000 lbs.
- 2) Change 2% to a “normal” number. Move the decimal point left 2 spaces (0.02)
- 3) Multiply this by the weight.  $0.02 \times 1000 = 20$  lbs. of feed **per day.**

- 4) 1.5% of body weight in roughage.  
 $0.015 \times 1000 = 15$  lbs of roughage.
- 5) 0.5% in grain.  $0.005 \times 1000 = 5$  lbs. of grain.

**Grain and hay do not have equal nutritional values. 1lb. of hay equals 0.75lbs of grain<sup>1</sup>.**

- 6) Multiply the 5 lbs of hay and 0.75 lbs of grain.  $5 \times 0.75 = 3.75$  lbs. of grain.

By adding 3.75 lbs of grain per day I am saving 5 lbs. of hay daily. I customized this to each horse and found that I could save 35lbs. of hay daily which is roughly a half bale. That is 3.5 bales weekly and 14 bales per month!

This sounds great however implementing this program required some planning and changes. I now need to feed two of the horses separately. I had to clean out the “storage stall” and return it to horse stall status. Two of the horses can be fed together since they will be getting the same ration and neither is dominant. I set up a weigh station in the feed/tack room and bought a hanging 50lb. scale (\$34.99) at Murdoch’s and found an old 8 quart bucket to hold the grain. Being fairly lazy I opted to buy a second scale for the hay stall so I wouldn’t have to walk back and forth to weigh things also a hay mess in my tack/feed room was not appealing. The second scale can weigh up to 100lbs (\$49.95). The next problem was how to weigh the hay. After some trial and error I finally found a way



that works and is easy to put together. I bought a plastic laundry basket. After drilling a hole in each corner I placed an eye bolt (with washers and nuts on both sides) on each corner of the laundry basket then used light chain and snaps to connect everything. The cost of everything I needed for this project was \$113.56, without the second scale total costs were \$63.57. Cost includes the chain used to hang each scale from the rafters.

Be sure to change feed slowly to prevent colic and other problems that can arise from too rapid a change. After feeding this program for a month I had to reevaluate things. I changed Wizbang’s feed from 2.0% to 1.5% of body weight since he looked less “fleshy” and chunkier. It is also important to look at your horse’s body condition and reassess your program as needed. Once I marked my grain scoops on the inside with a permanent marker with each horse’s amount I didn’t have to weigh it daily. I could also judge the hay weight by feel. I still needed to weigh grain and hay twice a week to stay accurate with the portions and prevent creeping up on the rations.

To prevent horses from wasting hay use a feeder and make sure you feed quality hay. Hay should be dust and mold free without excess weeds or twigs and have good color and a fresh smell.

One last important issue is the hay vendor. My advice is simple, find one or two and stick with them. I have been with the same folks for 8 years because I am a regular client they have always taken care of me during hay shortages. Friends who do not have an

established relationship with a vendor find that in a shortage they have a hard time finding hay. My vendor along with my Vet and Farrier are on my VIP list. They all get homemade cookies at Christmas along with a card and note of appreciation.

In summary, this program has helped stretch my hay supply. A benefit I didn't count on was that I now pay more attention to what I feed I'm not as wasteful and it gives the horses a more consistent diet. In answer to question is, yes it is possible for the average owner to stretch the hay supply and yes, it did add a little more time to my feeding routine, about 7 minutes. For me it is worth the extra time and work.

<sup>1</sup> Visit Colorado State University Cooperative Extension Factsheet 1.625, "[Stretching Your Horse's Hay Supply During Drought](#)" for more details.

## Eurasian Watermilfoil

By Sharon Bokan, SAM Volunteer

Eurasian Watermilfoil (EW) (*Myriophyllum spicatum*) is a submerged aquatic plant native to Europe, Asia, and North Africa. It is a very aggressive plant now endangering waterways in most states including Colorado. EW grows rapidly making a canopy that reduces sunlight and crowding out other species (vegetative, fish and other aquatic life). It grows



**Eurasian Watermilfoil**

mainly in ponds, lakes and slow moving creeks and rivers but on occasion may also be found in faster moving waterways. Normally preferring shallow water 3-12', Eurasian Watermilfoil may grow in water to 30' deep. It can grow in hard alkaline water, brackish water under a wide range on pH, and the roots can grow in sandy to acid peat soils. EW can cycle nutrients from lakebed sediments causing lower water quality and algae blooms. Its roots prefer fertile, fine textured inorganic sediments or areas of nutrient rich sediment, usually highly disturbed lakebeds or lakes with water intake that is nitrogen and phosphorus rich or highly utilized lakes.

The EW foliage is mostly submerged only emerging with water depth reduction or when flowering. The roots are rhizomatous (an

underground horizontal stem). Although EW does produce seeds the plant mostly spreads by plant sections or by roots (rhizomes). Stems grow from the lake/stream bed to the water's surface with fewer leaves lower on the plant. Most leaves are on stem branches near the surface forming the dense mat. The stems are divided into nodes (sections). At each node, the stem is encircled (whorled) with 3-4 leaves. The leaves are dark green finely divided (lobed)

giving them a feathery appearance and are approximately 1" long with usually more than 12 pair approximately 0.5" long lobes/leaflets. This is a distinguishing feature from western Watermilfoil, a native that has less than 10 lobes/leaflets (see photos). The stems and growing sections may have a red tinge.



**Western Watermilfoil**  
**NATIVE SPECIES**

Eurasian Watermilfoil blooms from June to September producing an emerged spike. The flower spike contains both male and female pinkish flowers, with male flowers at the top and female on the bottom. Some transitional flowers may be bisexual. Female flowers have no petals while male flower petals are short lived. Flowers are whorled around the stem like the leaves.

For EW control, prevention is the best method. Biological controls are being researched but currently are not successful enough to be marketed or recommended. Mechanical removal

can be used but care must be taken to not break off sections or allow broken sections to escape causing further infestations. Herbicides have shown some impact on EW but concern for their affect on other species has limited their use. BASF has recently obtained an Experimental Use Permit (EUP) for its Clearcast™ herbicide from the U.S. E.P.A. The EUP allows the use of Clearcast™ in 11 sites

including Colorado. Up to 2100 acres will be treated under the EUP for not only EW but also hydrilla, and water hyacinth. During the study, they will also be monitoring any impact on desirable species. The herbicides active ingredient is imazamox, which disrupts protein synthesis thus interrupting cell growth. It is translocated through the leaves and plants stop growing and die in 4-12 weeks.

Per Tim D'Amato, Boulder County Weed Management Coordinator, "EW is present in Boulder Creek from the ponds located on Arapahoe just west of Hwy 157 downstream to Weld County. This includes all creek fed ponds, and irrigation ditches. All waterways upstream are uninfested including the St. Vrain watershed above its confluence with Boulder Creek". The

original infestation is thought to be from a dumped aquarium but this has not been proven.

Ref:

Invasive Plants of the Eastern U.S.

[www.invasive.org](http://www.invasive.org)

Eurasian Watermilfoil, University of Maine

Extension Bulletin #2531, [www.umextmaine.edu](http://www.umextmaine.edu)

Aquatic and Riparian Weeds of the West,

DiTomaso and Healy, Univ. of CA Ag and Nat Res., Pub 3421

BASF website [www.basf.com](http://www.basf.com)



**Pond In Jefferson County Infested with Eurasian Watermilfoil**

## **Mountain Pine Beetle and Ips Beetle Infestations - What Small Acreage Landowners Can Do** By Janis Whisman, Small Acreage Management Volunteer

What are the mountain pine and ips beetles?

The mountain pine beetle, *Dendroctonus ponderosae*,

is native to Colorado and other forests in western North America. The similar ips beetle has 11 species that occur in Colorado. For information about the life cycles of mountain pine beetles and ips beetles and how they attack and kill trees, please refer to [Fact Sheet No. 5.528](#) for the mountain pine beetle and [Fact Sheet No. 5.558](#) for the ips beetle, both of which are published by Colorado State University's Cooperative Extension Service.

Although these beetles have many similarities, the mountain pine beetle is generally considered to be more destructive under normal circumstances, because they attack healthy trees and kill the entire tree. Ips beetles tend to attack unhealthy trees and kill only portions of the trees at a time, except in abnormal circumstances

caused by lengthy drought cycles and areas of freshly cut wood. For example, if cut slash piles are left on the ground, the ips beetle can build up its population in the slash piles and then move on to hit living trees.

#### What do these beetles do?

The mountain pine and ips beetles bore under the bark of trees to lay their eggs, leaving behind the harmful effects of tunnels and fungi that kill the trees. An infested tree is evidenced by ‘pitch tubes,’ which are holes in the bark with pitch oozing out that show where beetles have tunneled into a tree to begin their destructive process. The Fact Sheets referenced above provide very detailed descriptions of the effects of these beetles, so that information is not repeated here.

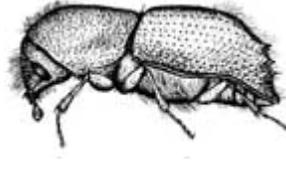
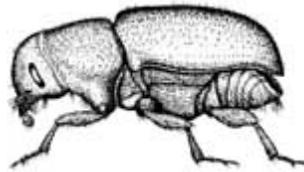


Figure 1: Adult *Dendroctonus* (left) versus *Ips* (right). Note gradually curved wing of *Dendroctonus*. Actual size of *Dendroctonus* from 1/8 to 1/3 inch, *Ips* 1/3 to 1/4 inch

As trees die from beetle kill, the needles turn reddish brown, and after the needles are sufficiently dry, they drop from the trees. While the dry needles are still on the tree, the danger of a severe forest fire is much increased, because the fire can easily jump from tree crown to tree crown and spread rapidly across a wide area. Once the needles drop and the trees are left bare and standing, the fire danger is significantly lessened – any fire would typically remain on the ground, spread less rapidly through ground fuels, and not burn the dead trees themselves.

#### What is happening now in Colorado?

According to Chad Julian, Forestry Supervisor for the Boulder County Parks and Open Space Department,<sup>1</sup> the last major beetle cycle in Colorado occurred approximately 80-100 years ago, sometime in the mid-1800’s. With the series of mild winters and spring/summer

droughts that Colorado has experienced over the past several years, these beetles have survived winters as larvae protected under the bark of infested trees. Adult beetles have then easily spread during the summer months across entire forest stands, most noticeably in areas like Grand County, Summit County, and where the Routt-Divide National Forests blow-down occurred in 1997. In these areas west of the Continental Divide, lodgepole pine forests are most severely affected due to their typical growth patterns

creating ‘dog hair’ stands of thin, weak trees that are easily infested. Beetles are also infecting forests in the Rawah Wilderness Area in northern Colorado and could move south into Rocky Mountain National Park and on to the Indian Peaks. Julian also noted that the

beetles are moving into forests at higher elevations as dry conditions continue, although they are staying within the variability of their natural ranges.

#### What are Boulder County and the US Forest Service doing?

Boulder County is continuing its efforts to thin unhealthy and thick forest stands on County-owned properties. Eric Philips, wildfire mitigation coordinator for Boulder County,<sup>2</sup> helps small acreage landowners develop plans to protect their homes from catastrophic wildfire, and implementation of such plans may also help prevent beetle problems. The US Forest Service has recently dedicated \$1 million for forest thinning and other beetle treatments in the Rocky Mountain region, and these funds will be used across the region (not just in Colorado). Deputy Regional Forester Richard Stem believes these funds are insufficient to treat infested areas

<sup>1</sup> 9/11/06 personal communication with Chad Julian. Other references to Mr. Julian in this article describe information gleaned from the same conversation.

<sup>2</sup> Eric Philips can be contacted at (720) 565-2625. Please mention that you heard about him in this article.

adequately,<sup>3</sup> but no additional funds have yet been committed.

### What can small acreage landowners in Boulder County do?

Julian says that in Boulder County, the beetles are tending to infest ponderosa pine only and are not yet jumping into large stands of lodgepole pine. This helps slow the pace of infestation in Boulder County. According to Bob Bundy with the Colorado State Forest Service, “the insects are hitting lodgepole pines in small pockets on Tennessee Mountain southwest of Nederland.”<sup>4</sup> In Boulder County, lodgepole pines occur in the Upper Foothills region (at about 6,000 feet to 8,000 feet in elevation) up through the Montane region (at about 8,000 feet to 9,000 feet in elevation) and even into the Subalpine region (at about 9,000 feet to 11,000 feet in elevation).

Landowners can control beetles in trees on their properties by following the guidelines outlined in the two CSU Cooperative Extension Service Fact Sheets referenced at the beginning of this article.

For additional information, access the Colorado State Forest Service’s website at [www.csfs.colostate.edu](http://www.csfs.colostate.edu) do a search for “mountain pine beetle” or “ips beetle” and look for the color posters that



sponsored a grass/pasture tour in the Greeley area.

The first stop on the tour (*pictured on this page*) was at a 4 year old native grass pasture. The pasture was seeded in June 2002 with sterile sorghum as a cover crop. In September 2002,

give steps for managing these beetles. Spraying pesticides on healthy trees and thinning stands of thick trees helps remaining trees grow more robustly and reduces the risk of severe fires.<sup>5</sup> Landowners can also recognize that although the dead trees are undesirable because they cause unsightly conditions and increase the fire danger until the needles drop to the ground, beetle infestations are part of the forest’s natural cycle of growth, decline, fire and rebirth. After beetle-infested trees die, sunlight reaches the ground more easily and regenerates forests with new trees that can create a healthier and more diverse forest.

### **Pawnee Buttes Grass/Pasture Tour** **By Sharon Bokan, SAM Volunteer**

On August 4, 2006, Don Hajar owner of Pawnee Buttes Seed in cooperation with Colorado State University Cooperative Extension and the Natural Resources Conservation Service

Sand bluestem and Yellow Indiangrass were drilled 0.25 to 0.5” deep into the sorghum stubble. In this area of Colorado, all soils are sandy. No irrigation was available to aid grass germination. During its first growth year (2003) no herbicide application was used to control

<sup>3</sup> 9/27/06 Colorado Public Radio spot on Colorado Matters, “New Plans to Address Bark Beetle Infestation,” [http://www.kcfr.org/index.php?option=com\\_content&task=view&id=94](http://www.kcfr.org/index.php?option=com_content&task=view&id=94)

<sup>4</sup> 8/11/06 Daily Camera article, “Protecting Against Pine Beetles”, [http://www.dailycamera.com/bdc/science/article/0,1713,BDC\\_2432\\_4909729,00.html](http://www.dailycamera.com/bdc/science/article/0,1713,BDC_2432_4909729,00.html)

<sup>5</sup> Ibid.

weeds only mowing once grasses were taller than 8". This year (2006) is the first year that the grass has been grazed. In 2004 and 2005, weed control with herbicides was used and the grass mowed for hay. Grazing on these grasses is appropriate between 8 and 24' in height. With these warm season grazing should be stopped once grass height reaches 8". Observation of this pasture indicates that the cattle prefer the Sand bluestem.

The next stop was a Pelican Lake Ranch (small acreage home sites) where common areas are being seeded with native grasses. Most grasses in this area are taller (1 to 3') which is a plus for wind erosion in this very sandy area. Several grass drills were on display. Grass drills differ from grain drills in that they only plant the seed 0.25 to 0.5' deep as opposed to 1 to 2" deep for grain. They also have 3 different boxes and mechanisms to handle chaffy and fluffy grass seed, small seed and larger seeds. Native grass seed can be broadcast seeded, disc drilled or with a trillion. When grass is broadcast seeded a chain or some mechanism for improving seed/soil contact must be used. With a trillion, a continuous sheet of seed is dropped between a set of ring rollers. The disc planter drills the seed in the soil and is best for uneven seedbeds.

The next stop was at the 70 Ranch, which was seeded in the spring of 2005 as part of the Conservation Reserve Program, with a cool season grass blend of green needlegrass and pubescent, intermediate, western and slender wheatgrasses. When planting grasses, it is best to separate cool season from warm season grasses. Native grasses in this eastern Colorado area are usually bunch grasses not sod formers so



pastures are not dense lush pastures. They may look sparse but are actually quite healthy and can support grazing. Also at the 70 Ranch (the site of the longer operating National Hog Farm), we saw reclamation efforts using native grasses. They are reseeding oil field drill sites along with the abandoned National Hog Farms site. In these areas, straw is crimped into the soil along with the grass seed to trap moisture and reduce soil erosion due to wind.

An excellent lunch was provided by the local 4-H Washington Focus group.

After lunch, Steve Ryder of Legacy Land Trust ([www.legacylandtrust.org](http://www.legacylandtrust.org)) spoke about his organization, which purchases conservation easements in Larimer, Weld and Jackson counties. They are providing an alternative to selling farm ground for development.

The final stops were within Greeley. The stops included common areas in a housing development and a park that had been planted in

native grasses (pictured on this page). Not all of the park was native grass but those areas outside of the playground and picnic area were seeded in the natives. The park trail system wound through these "natural"

areas.

The tour was very informative about native grasses planting and establishment. Although, the species and some of the techniques were aimed at sandy soils a lot of the principles can also be applied to other soil types.

## **Become a Colorado Master Gardener in Boulder County**

Applications for the spring 2007 Colorado Master Gardener program in Boulder are due Nov. 1; classes begin in January.

Those accepted to the program receive 11 weeks of training in plant care and have the opportunity to work with other gardeners from Boulder County to volunteer in the community. The Master Gardener program is ideal for gardeners who wish to increase their knowledge of horticulture and help others learn the joy of successful gardening.

In addition to receiving training from Colorado State University professors, specialists and horticulture agents, master gardeners learn on the job as they perform 50 hours of volunteer work during the growing season. Volunteers help the community by answering questions on garden care and provide education through teaching classes, writing news articles, working with special audiences and maintaining demonstration sites. Statewide, the value placed on the time donated by the 1,800 plus master gardeners is more than \$1.3 million.

The Master Gardener program also can be a stepping-stone toward a career in horticulture. Recognized by the green industry as a great vocational education course, the Master Gardener program is open to persons within and outside of the professional growing area. Many people considering a career in the green industry start with master gardener training as an all-around introduction to advanced plant care.

If gaining knowledge and helping others through horticulture is of interest to you, the Colorado Master Gardener program is an ideal volunteer choice. Please contact the Colorado State University Cooperative Extension office in Boulder at (303) 678-6238 for more information or an application. There is a fee for materials and space is limited.

### **Place your SAM related classified ad or print advertisement here!**

#### **Classified Advertising Rates are as follows:**

SAM Volunteer: 20 cents/word

4-H Member/Leader: 20 cents/word

General Public, Individual: 25 cents/word

General Public, Business/Show: 30 cents/ word

#### **Print Ad Rates are as follows:**

Quarter Page Ad: \$50.00

Half Page Ad: \$80.00

Full Page Ad: \$100.00

**Email Adrian Card for more details**

[acard@co.boulder.co.us](mailto:acard@co.boulder.co.us)

